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An Essay on the Cicuta maculata

By Marcus C. Buck
of Fredericksburg Virginia

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Nulla quidem est philosophae pars aut historiae naturalis, quam a medicinae studio existimare licet alienam. Macfarlane &c.

And may we not yet look for the discovery of medicines as important to mankind as Opium, the Bark, & Mercury. – Professor Barlow.

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In reflecting on the various means by which we have been led to our discoveries in Nature, we have too frequently to deplore the fate of genius, of friends, of relatives, who by the eager pursuit of knowledge, or by accident, have been destined to give birth to discoveries, the fruits of which an untimely death has prevented them from enjoying. — Amongst the causes contributing to the production of this Effect, may be considered the Cicuta Maculata, an article, of which the poisonous qualities though sufficiently established, are not so generally known as the safety of the inhabitants of a country abounding with it demands. —

To the consideration of this subject I am impelled not only by its intrinsick importance, but by the strongties of fraternal affection, which invoke me to convert to advantage a misfortune which is irremediable, or to warn others against incurring it.

To the deleterious properties of this plant I owe the loss of a dear relation, a brother, whose sprightliness,

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and amiable qualities endeared him to every acquaintance, & rendered him the favorite of his over affectionate parents, who had anxiously hoped to have found in him the comfort of declining age.

These considerations, while they awaken all those sensations which are their natural result, inspire me with fresh vigour to the research. — And should I fortunately suggest any thing which may tend, even indirectly, to the benefit of mankind, it will afford some alleviation to the distress occasioned by the loss of so dear a relation.

I regret that my situation during the last summer did not admit of my making the experiments; I hoped to have been able to continue them after I came hither, but I did not bring with me a sufficient quantity of the plant. — And if I had my requisite studies would have been an obstacle to my conducting them properly. — Under these circumstances I hope you will rest satisfied with those ~~xxxxxxxxxx~~ which have been hastily made by

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one unaccustomed to experimenting, until he shall have more time to devote to the subject. —

The Cicuta maculata is a plant of the natural order umbelliferæ. – It grows abundantly in the United States, particularly in the moist meadows of Virginia. – It is there known by the names of Wild parsnip & Wild carrot. – It puts forth early in the spring, blossoms in June & its seed ripen in September & October. – It generally grows to the height of four or six feet. – It has a large hollow stalk, about the size of the middle finger. It is a compound stem & dichotomous or forked. – The leaves are oblong lanceolate & serrate. – The seed is small & oval about the size of the fennel. – The root is horizontal & tuberose, having a number of radicles shooting out from the side. The whole plant is most frequently green, but sometimes the stalk inclines to white, & often purple, particularly about the joints.

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-tremely disagreeable. - The leaves are somewhat bit-
-ter aromatic & unpleasant to the taste. - The taste of
the root is to some persons agreeable, but to me, very much
the reverse (perhaps from association, having once tas-
-ted it, till I had intuited its poisonous effects.)
Its taste & appearance have caused it to be mistaken
for the sweet anise, a mistake, which has in several
instances, proved fatal to the unfortunate lovers of that
root. -

I have not discovered that any of our animals feed
on this plant. - Hogs carefully avoid it, though they
so greedily devour most roots. I have frequently
thrown the whole plant to them & never saw them
touch any part of it. — On examining the
plant in the middle of Septr. I found it quite yel-
-low, stripped of its leaves & covered by insects resem-
-bling those which are seen on the cabbages.

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General remarks

Experiments made on the appearance of 2d (which) in a different state of the plant interestingly show that they severally contain iron & manganese. The evidence afforded, rather against the peculiar activity of the plant in producing deleterious effects, no doubt depends on the nascent principle, which Chemists have discovered in other vegetables &c. But this principle is of subtile a nature that it would elude the experiments of an inexperienced Chemist; & I fear that it would elude the skill of a better chemist.

I see no difficulty in the commencement of the vegetable kingdom. Notwithstanding general rules have been laid down for such merely atomic, and vegetable substances are so complicated in their structure, that the means of the analytical chemist are frequently inadequate. But notwithstanding the existence of a number of strange opinions, some of which have no principle in them, yet we find some of them are delicious & nutritious while others are poisonous in the extreme.

[illegible] on [illegible].

Experiment 5th. With a drachm of the [illegible] [illegible] [illegible] were made into 8 pills with mucilage of gum arabic. To a Cat nearly [illegible] [illegible] [illegible] one [illegible] wrapped up in a piece of [illegible]. After [illegible] 5 of the [illegible] [illegible] [illegible] unsteadily but [illegible] [illegible] in 6th [illegible] [illegible] on the [illegible] which she [illegible] refused by letting out the meat as soon as she [illegible] that it contained [illegible]. [illegible] attempts made to take the [illegible], but she [illegible] [illegible] [illegible]. In 5 minutes she became sick, and [illegible] [illegible] very [illegible]. [illegible] [illegible] she fell at the [illegible]. In 2 minutes more the [illegible] [illegible] twitching of the muscles of respiration. [illegible] [illegible] which she did not [illegible]. She then closed her eyes & as she sat on the side of the table tottering so as to be in danger of falling off [illegible]

room of the room, of which she took not the least
notice, though she is generally very irritable. She
continued in this higher state 20 minutes, she then was
rather very insensible to the heat, from whence
a rise of the cat increased. [illegible]
to see next to a pitch of rage & rendered
very excitable, but I not [illegible] in a rank
[illegible] in the wild. Around that night in the
room & left in, and was growing dark — 70 C. P.
Clock next morning. I found it apparently well.

Experiment 2nd — On the next day I prepared
the same cat (Tiff) & a saturated insulated in the same
state. — Recommencing the several other experiments,
I was satisfied in the absence of any movement
yellow Sherent Mr. Briggs. — In 2 minutes after
he in edeau the cat became very restless drawing the
whiskers in head between the fore legs, & tried to
[illegible] in alarmed. When she walked, she raised
her fore extremities on the floor, as if her feet
were [illegible] the [illegible] had a considerable

urine discharge, which was tinged & black covered with green. In the 3rd & 5th minutes she again evacuated a green, resembling the water. In the 6th minute she emitted a green much darker & greater in quantity than the water. After the green it became quite large & it was about 3 inches in length, resembling [illegible]. [illegible] than [illegible] in the former species. In the 10th 16th & 21st minutes made attempts to discharge faeces. In the 31st minute she still was a deep green [illegible] see frequently [illegible]. In the state I left her & did not see her for 2 days when she again was as lively as ever & not so much emaciated as she had eat nothing since the experiment

April 3rd. Ten drops of a saturated solution [illegible] were given to a chicken [illegible] In 4 minutes it had an urine discharge, in five [illegible] another [illegible] 12th min [illegible] another evacuation. It now looked [illegible] & [illegible] to [illegible] from side to see [illegible] sudden

[illegible] & [illegible] for [illegible] and [illegible]

Exp. 4th 4th. [illegible] 35 [illegible] 30 [illegible]

[illegible] & [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

Exp. 5th 3rd. [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] **mouse**. [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

Expt 6th. To a small dog ʒj of an aqueous infusion of the root was given. In 5 minutes the pupils of his eyes became [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] ʒj [illegible] the infusion [illegible] a rotatory [illegible] [illegible] [illegible] minutes [illegible], & [illegible] [illegible]. Although [illegible], & [illegible] from sleep [illegible] [illegible], but were [illegible] again. [illegible] with a switch by which he was aroused. [illegible] lived [illegible], but as he became very [illegible] [illegible] [illegible] & [illegible] [illegible] afterwards.

Several other experiments were made, [illegible] [illegible] but little from those related, & I [illegible] unnecessary to detail them. [illegible] [illegible]

[illegible] [illegible] the recent [illegible] [illegible] plant. From these it appears that the active prin-ciple [illegible] exists [illegible] [illegible], & that in [illegible] [illegible], tincture & [illegible] extracts, [illegible] [illegible] [illegible] [illegible].

Effects produced on the Human System.

In the [illegible] [illegible] [illegible] made [illegible] [illegible] [illegible] produced by the plant was [illegible] [illegible] [illegible] [illegible] [illegible] of the tinctures & watery prep-arations of each part of it; the same [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] & afterwards diminished; in others it was diminished without previous elevation. [illegible] [illegible] [illegible] stomach head &c [illegible] [illegible] In most instances after taking from 20 to 40 gtts of the [illegible] [illegible] [illegible] at the stomach, a sensation of [illegible] of the head, [illegible] [illegible] [illegible] with some dimness of sight, & then Trace [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of the tincture [illegible] [illegible] [illegible] [illegible] were [illegible] [illegible] [illegible] [illegible] [illegible]

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fore dedant. The young man who first got to him
on seeing some of the cot by him immediately suspected
the cause of his malady (for he had heard of its
fatal & sad for my Father. A Physician was
also sent for who got to the house nearly as soon as
my Father — for he arrived only in time to see
him expire. — He no longer recognized the consol-
ing voice of a fond Father, nor was sensible of the
shrieks & caresses of a distracted mother. The pupils
of his eyes were dilated his head & shoulders drawn
forcibly backwards — & a rescued his arms shaken
with blood flowed out at his mouth. A great
quantity of the phlegm was drawn out by the
lungs which afforded no relief. On raising him up
he breathed with the utmost difficulty & the
physician ordered a large dose of Bitt alb. which
was not weighed) to excite vomiting, but it had no ef-
-fect. He then ordered him a bolus into the stomach
which was equally ineffectual — He expired in a
few minutes after this attempt. — On consulting

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the time, it appears that his death took place in less than two hours after he ate of the root. — The nervous system was not affected by what he ate, either from the small quantity, or, probably, the frequent, & violent exercise which my brother's situation occasioned, may have had the effect of lessening its action.

The other cases which I have heard of, were attended with symptoms very analogous to the preceding. In some instances I have been informed, that the first sign of death has been arrested, by the exhibition of large draughts of new milk. But I have not been able to procure the history of these cases.

In the 3rd Volume of the American Philosophical Transactions, a case is related by Dr. John Greenway of Virginia, proving the poisonous nature of a plant which I have settled about in the same work I have spoken of. In this I am confirmed by the opinion of the Professor of Materia Medica, who was so obliging as to furnish me with the book containing that case. — The only material dif

difference is that he describes the plant as growing on "dry barren lands," whereas I have only met with it on rich moist places. The plant which he describes had the same fine wild carrot, wild parsnip, fennel root & moist cool root; the calts et licita [illegible]. – The case is interesting & calls the liberties of questions &c.

(illegible)

[illegible]

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[illegible] to the [illegible] in [illegible]"
[illegible] appears to be [illegible] such. I have [illegible]
[illegible] were not [illegible] [illegible] I should prove
the poisonous qualities of the roots which were [illegible]
[illegible] [illegible] same cause varied in
degree & operating on different constitutions
[illegible] [illegible] [illegible] in Europe
[illegible] in no respection to [illegible] considering the plants to
be the same

As to the medicinal virtues of the aconite
[illegible] fact, no experiment enables me to say
[illegible] I have [illegible] of [illegible] [illegible]
in any way as a medicine; & my situation as a
student) excluded me from [illegible] [illegible], & my
[illegible] experiments not [illegible] [illegible] [illegible]
[illegible] [illegible] as a medicine, is no argument against
its utility; for many of our most valuable medicines
have remained concealed in obscurity, till [illegible]
[illegible] [illegible] discovered, [illegible] [illegible] the poisonous
[illegible] certainly favor the conjecture that it
may be found an useful medicine. For some

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the learned Professor of Mat. Med. speaking of Lauro Cerasus "Among these deleterious articles, we are to look for the best preservatives of health". From its analogy to some other active articles, we may presume that it will be found beneficial in some of the diseases to which they are adapted. And as a small variation in properties may contribute very much to the efficacy of a medicine, may not this be one of the remedies which nature has reserved for the cure of some disease, which has hitherto been the opprobrium of medicine? For the discovery of the disease to which it is adapted, no persons are so well calculated as the respectable Professors of this university, to them I commit it & confidently hope they will not find the subject unworthy of their attention.

So much has been written on the means of preventing the effects of poisons, that it seems unnecessary for me to dwell on that subject. I will only observe, that as cases are reported to have been relieved

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by the use of new milk & sweet oil, that they deserve attention. But I by no means think they should be used to the "exclusion of other remedies". Although an emetic was ineffectual in the case recited, I attribute it to its not being given sufficiently early & should recommend its administration if called in immediately after the poison was taken. — And as the application of tobacco to the epigastric region, as advised by Dr. Barton, has succeeded in causing opium to be ejected when internal medicines have failed, I think it should not be neglected in this case.

To the illustrious Professors of this University, I now tender my most sincere thanks, for the permanent advantages which I hope I have derived from attending their interesting Lectures. — I can not conclude without expressing my gratitude particularly to the Professors of Materia Medica & Anatomy, whose publick & private favors have made impressions on my mind which shall never be obliterated.